

20 WAYS TO FACILITATE LEARNING EXPERIENCES THROUGH DIFFERENTIATED INSTRUCTIONAL STRATEGIES

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ABSTRACT

The challenges teachers face everyday in effectively teaching ALL students along a pre-determined path, usually with pre-determined curricula, towards a goal of adequate yearly progress is overwhelming to say the least. Classrooms are comprised of more and more diverse students in terms of ability, background and experiences, learning preferences, and instructional needs. In order to effectively facilitate learning experiences for their diverse classrooms, teachers must differentiate their daily instruction. This article offers four broad categories of strategies to consider when designing and differentiating instruction to better facilitate learning for all students: (a) instructional organization, (b) instructional delivery and methods, (c) student progress monitoring, and (d) organizational supports. Additionally, implications for practicing teachers and pre-service teachers are highlighted.

Keywords: *Instructional strategies, Differentiated Instruction, Strategy, Effective, Instruction, Instructional Organization, Instructional Delivery, Progress Monitoring*

INTRODUCTION

Few professions are as complicated and intricate as teaching. Each year begins with a group of new students with varied backgrounds, abilities, and learning preferences. Teachers are charged with the responsibility of moving ALL students along a pre-determined path, usually with pre-determined curricula, towards a goal of adequate yearly progress (IDEA, 2004; No Child Left Behind Act, 2001). Once the classroom door is closed, the art of teaching or the "HOW" is completely controlled by each individual teacher (Bost & Riccomini, 2006) and many struggle with the daunting challenge of differentiating instruction to meet the needs of their diverse students.

Adding to this challenge, learning is a very complex process, the outcomes of which depend on the interaction of many variables (e.g., curriculum, instruction, learner characteristics). In this article, 20 strategies are described to better enable teachers to effectively differentiate instruction for diverse students in

their classrooms. The strategies described are not specific to any student group or content area, but are effective across all content areas, grade levels, and ability groups. The article offers four broad categories for teachers to consider when designing and differentiating instruction for their daily lessons: (a) Instructional Organization, (b) Instructional Delivery And Methods, (c) Student Progress Monitoring, and (d) Organizational Supports.

Instructional Organization

Use Big Ideas for Lesson Foundation

Big ideas (e.g., fractions, ratios, solving for unknowns, photosynthesis, principle of equity) are essential concepts or principles associated with student learning outcomes and should form the foundation of all instruction. It is important to prioritize the critical concepts and principles to help learners connect big ideas to prior learning and to then use these connections to provide bridges, through systematic instruction, to other knowledge. Big ideas also form the basis for generalization which helps students to connect disparate ideas. For example, fractions are

essential preskills to ratios and proportions, but are often presented as a separate big idea. Instruction that helps to connect big ideas such as fractions to ratios and proportions is more effective than instruction emphasizing separate skills. Individual lessons on small disconnected skill areas and themes do not necessarily develop these important bridges resulting in shallow and often splintered foundations. State and national standards can help to determine big ideas as well as teacher experience.

Sequence Information Strategically

After establishing the important big ideas, determine the subconcepts and a logical sequence of presentation. Separate the subconcepts down into manageable parts for students, anticipate where problems will occur, and decide how to best teach any difficult subconcepts (e.g., equivalent fractions). Through ongoing, formative assessment, teachers can ensure students have learned each subconcept before moving forward. For example, the big idea in math for "solving for unknowns," might include the following subconcepts: (a) fluency of basic facts with signed numbers, (b) relevance through actual equations by substitution, (c) equations by subtraction, and (d) equations by addition. In order to solve math equations with missing variables, students must learn each subconcept in a logical sequence (Witzel & Riccomini, 2007) before demonstrating proficiency with the big idea (solving for unknowns).

Teacher guides and Internet instructional sites are good sources for ideas on how to logically sequence information. Remember, textbooks are not necessarily appropriately and strategically sequenced for students with disabilities. Modifications to instructional lessons within the textbook are important and essential.

Develop a Lesson Organization that Provides Consistent Structure

Effective lessons are structured in a clear and consistent manner and include three main components: (a) introduction or "catch," (b) model, and (c) practice opportunities. An effective lesson begins with a "catch", which grabs the students' attention and purposefully

connects new ideas to prior knowledge. Capturing students' attention is sometimes very difficult and requires creativity and enthusiasm from the teacher. The best organized lesson is certain to fail if students are not attentive and interested. Additionally, before introducing a new skill it may be necessary to reteach or review important preskills essential for learning the new content. After the introductory portion of a lesson, present new material in a clear and direct manner, allowing sufficient time for students to ask questions and assimilate the new information. Then, provide a model to demonstrate the concept or specific skill of the lesson. Generally, the model should include 3-5 examples depending on the learner characteristics and/or difficulty of the content. It is important to use clear and consistent language throughout the lesson, especially when students with disabilities are present; they are easily confused by inconsistent language (e.g., borrowing, regrouping, carrying).

Many students require well structured and planned opportunities to practice newly introduced content. Adequate practice is essential and should include both guided and independent practice. In guided practice, work through several problems with the students to ensure learning and student readiness for independent practice. It is beneficial to quickly review the new content emphasizing the most critical attributes before beginning independent practice. This quick review serves two purposes. First, the review provides another opportunity to check for understanding and learning, allowing for additional corrections or reteaching if necessary. Second, highlighting the main points of the lesson further emphasizes the big idea(s) of the lesson. Many curricula do not provide these essential components and modifications are necessary and relatively simple to make.

Connect New Material to Prior Knowledge

Connecting new material to prior knowledge is essential to help clarify the relationships between previously learned content and new content as well as stimulate student interest. In the beginning of each lesson include

activities that directly connect new concepts to prior knowledge and student interests. Whenever topics or concepts are related to real life familiar situations, learning is more likely to occur because students are motivated and can clearly see connections to previously learned knowledge. Teaching isolated and separate information is neither engaging nor interesting.

Explain New Content Clearly

Instruction is most effective when it is presented in a clear and direct manner. This is often referred to as systematic and explicit instruction. Design instruction that is systematic and explicit by (a) stating the goals and objectives at the start of the lesson, (b) structuring the lesson in a consistent format, and (c) presenting the content in a direct and clear fashion. The explicitness of instruction is crucial for students who struggle with learning, especially at-risk students and students with disabilities. These students are often disorganized learners who do not naturally make sense of observations and generalizations independently. For these students, explicitly introducing new skills is important to reduce any incorrect learning and application because of pre-existing gaps in knowledge and skills. Erroneous conclusions take much more systematic and explicit instruction to correct; therefore, preventing incorrect learning from occurring is crucial.

Correct Errors Quickly

Student errors and misconceptions will continue and become further ingrained (i.e., learned) if not corrected (Riccomini, 2005). For this reason, it is important to continually monitor student learning during and after each lesson. When an error occurs, immediately stop the student, model the correct response, prompt the student to repeat the correct response, and then continue with the lesson. Additionally, following up with the student who made the error at the end of the lesson is an even more effective instructional correction. Effective teachers are able to detect student errors quickly and provide necessary and appropriate correction without interrupting the flow of the lesson. Allowing students to guess or "fish" for correct answers may actually provide

practice of an incorrect procedure or concept; not an efficient or effective correction strategy.

Make Abstract Concepts Concrete

Understanding abstract concepts allows students to generalize and apply information to new situations. However, students with learning disabilities, as well as other low achieving students, often have gaps in prior knowledge and struggle to apply abstract concepts. One promising practice is the incorporation of directed manipulative activities into instructional routines. The use of manipulatives can promote learning and correct application by introducing concepts in a concrete fashion first. For example, introducing three dimensional objects first (e.g., base ten blocks), then proceeding to the two dimensional representations (e.g., pictures of base ten blocks), allows students to make connections between the real object and the drawing of the object (Witzel, 2005). Providing students with a concrete representation first promotes better and deeper understanding of complex concepts and helps bridge the transition to the correct application of procedures (e.g., regrouping) and knowledge (e.g., place value, Pythagorean theorem).

Consider these general guidelines when using manipulatives. First, introduce the manipulative by modeling its use and explicitly describing the concept(s) represented. Next, provide sufficient opportunities to practice representing the concept(s) with sufficient teacher guidance. Initially, structure and/or teacher guidance is critical to help students with disabilities and low achieving students learn appropriate generalizations. Asking a series of specific questions will guide practice and further experimentations with the manipulatives. Finally, allowing time in which students are able to use a variety of manipulatives and discuss similarities and differences promotes deeper learning. Allowing students to "play" with manipulatives is not an efficient use of instructional time, especially for naïve learners.

Instructional Delivery and Methods

Increase Allocated and Engaged Time

It is critical, especially for struggling learners, to spend

sufficient and adequate time actively and successfully engaged in learning. "Allocated time" is the amount of time scheduled for a specific content area. "Engaged time" is the amount of allocated time spent directly engaged in instructional tasks. Teachers can increase the amount of time students are appropriately engaged in instructional tasks through the: (a) effective design and delivery of lessons, (b) selection of interesting and culturally relevant materials at the appropriate instructional levels, (c) offering a variety of opportunities for student responses, and (d) reinforcing class participation. The more engaged and successful students feel, the more motivated they will become; hence, learning will increase.

Use Choral Response and Response Cards

Choral response and response cards are two methods used to increase student engagement during instruction. After giving clear directions and modeling 3-5 examples, engage students by asking questions, then students respond in unison after using a predetermined signal. This prevents more advanced students from quickly calling out answers and increases the length of wait time between question and answer, allowing slower processing students sufficient time to respond. Response cards are used to answer questions that have limited number of answers, such as "yes" or "no". Cards are pre-prepared with "yes" on one side and "no" on the other, or they are left blank for student input. These two strategies can increase the amount of time students are engaged, but they also provide an easy way to monitor learning of new content during instructional time.

Use Effective Questioning Techniques

The level of questioning determines the level of students' thought processes. One effective instructional strategy is to balance the number of questions requiring "yes" or "no" answers with questions requiring a deeper level of thinking. Rephrase simple questions into more thought-provoking questions that require students to process information and draw conclusions, instead of offering one word answers. Even very young children can answer questions requiring deeper processing. For example,

instead of asking, "Does this paragraph tell you why the boy is scared?" ask, "Why do you think the boy is scared? How can you tell? What do you think will happen next and why?" This rephrasing is a quick and easy way to raise the level of processing as well as increasing student engagement, an important aspect of teaching and learning.

Maintain a Brisk Pace

Sometimes, learners have difficulty focusing and attending to tasks. A slow moving lesson not only loses student attention, but it also minimizes the amount of time students are actually engaged. Careful planning and organization is imperative to keep the lesson moving briskly and maximize student engagement. After initial instruction, move quickly into a questioning strategy to increase student engagement and determine progress and learning. For example, the lesson structure mentioned above introductory "catch", presentation of new material, guided practice, independent practice keeps the lesson moving in a predictable manner. If the lesson is adequately planned, the teacher is better able to move smoothly and quickly across components while continuing to engage all students.

Use Guided and Distributed Practice, Not Drill and Kill

The goal of guided practice is to ensure all students have opportunities to apply the new skills correctly and frequently, with teacher guidance and feedback, before attempting to work individually. It is especially important to monitor struggling students closely when involved in a guided practice activity. Instructional time is used more efficiently when targeted tasks are integrated with previously learned material, and the subsequent practice is distributed. For example, at different times, the teacher can present examples of the learned skill(s) while the students display answers on cards or individual whiteboards. This provides several opportunities to evaluate students' learning and provide immediate feedback and correct errors. Once students have demonstrated a high level of proficiency (at least 90%), it is then appropriate to complete independent practice activities. Completing worksheets with 50 math problems

is not the most efficient use of student and/or teacher time. AVOID DRILL AND KILL!!!!

Alternate Using Examples and Nonexamples

The use of nonexamples during initial instruction, guided practice, and independent practice activities is an important and underutilized instructional strategy. The use of nonexamples highlights subtle, but different attributes essential to the learning and application of new concepts. Nonexamples are examples similar in appearance to the main concept or skill of the lesson, but differ in one minor attribute. For example, a square and rectangle are both polygons; however, a square is a regular polygon because all sides are equal where as a rectangle is not. Although basic, this minor difference is an important characteristic to learn.

During the demonstration part of a lesson for teaching regrouping procedures, example problems should include at least 1-2 nonexamples. Refer to Figure 1 for a set of examples and nonexamples. The nonexamples will not require the student to regroup. This is an important distinction for students to recognize and discriminate, especially students with learning disabilities who tend to overgeneralize (i.e., regroup once, regroup every time). The systematic and consistent use of nonexamples during instruction teaches students when NOT to apply certain procedures and rule-relationships by highlighting important attributes many students do not necessarily learn on their own.

Use Flexible Grouping

Increased achievement occurs when students are directly taught or supervised by their teacher. One way this can be addressed effectively is through different grouping arrangements. There are several different arrangements for placing students into instructional

Example 1	Example 2	Example 3	Example 4	Example 5	Example 6
4 6 7	5 3 8	5 2 5	5 2 5	7 3 7	8 6 7
+ 2 1 3	+ 8 9	+ 4 6 7	+ 4 6 4	+ 1 2	+ 2 3

Note: Example problems 1-3 and 6 require the student to recognize and apply the rule-relationship for regrouping. Example 4 and 5 are nonexamples and require the student to recognize the rule-relationship for regrouping, but NOT apply the rule.

Figure 1. A Set of examples and Non-examples

groups (e.g., whole class, small group, one-to-one) and each has its distinct advantages. For example, whole group arrangements engage all students in shared learning experiences, while small homogeneous groups permit teachers to meet individual student needs and increase opportunities for all students to respond. Grouping by skill level allows teachers to provide more individualized instruction and feedback as well as adjusting instructional pacing. Flexible grouping allows for students to move freely across groups depending on skill levels and content; it is not tracking. One size does not fit all and many students require additional and differentiated instruction; flexible instructional grouping is an efficient method to address the individualized needs of students.

Student Progress Monitoring

Monitor Students as They Work

Circulating around the room to monitor student learning during the lesson and independent practice activities is essential. As students work, either in small groups or individually, walk around the room, stop and listen to each group, and ask students to explain what they are doing and how they decided what to do. This is an opportunity for teachers to provide enrichment for students or groups of students who are performing very well and learning at a faster rate. Differentiating instruction for fast learners is just as important and equally challenging as differentiating instruction for struggling learners. Differentiating instruction for faster learners is important for keeping those students engaged. Teachers can easily document students' progress and learning during instructional activities by carrying a clipboard with predetermined criteria contained in an easy to record spreadsheet and noting student progress for future reference. Monitoring and recording student learning in an organized format aids in the instructional planning for reteaching and providing enrichment activities in subsequent lessons.

Use Formative Assessment to Inform Instruction

Formative assessments are used to monitor student progress and inform teachers when instructional adjustments are necessary. Curriculum-based

measurement (CBM) is an especially effective type of formative assessment used to monitor student progress in reading, mathematics, spelling, and written expression. CBM consists of a series of very short assessments or "probes" of skills required for success in reaching the end of year goals. The measures are very sensitive to change and the results are graphed for a visual representation of student progress. When teachers use CBM to inform instruction, student achievement improves (Stecker, Fuchs, & Fuchs, 2005). More information on progress monitoring is available at www.studentprogress.org.

Organizational Supports

Develop Reminders

Naive learners often require assistance with the storing and retrieving of information. Reminders are teacher-provided aids such as mnemonics, keywords, acronyms, mental images, rhyming words, or do lists. Reminders can help students recall specific words, definitions, and factual information, as well as specific rules and procedures required to solve problems. "HOMES" is an example of a common mnemonic strategy used to remember the names of the great lakes where each letter stands for one of the Great Lakes. HOMES helps prompt a student to list the 5 Great Lakes: Lakes Huron, Ontario, Michigan, Erie, and Superior. Reminders abound in all content areas and are useful to ALL students.

Scaffold Note Taking through Guided Notes

Struggling learners have difficulty in organizing their thoughts and integrating new skills with those already learned. Guided notes provide a skeletal outline of the main points of a lesson or demonstration, with blank spaces for students to fill in information as it is presented. The skeletal outline can increase student engagement by allowing students to focus on the most pertinent information instead of focusing on task of writing notes. It also provides a record of important information for future reference. Guided notes are not limited to paper and pencil format. The Internet is a common source of information for students working on school assignments. Using electronic sources (i.e., Internet, CD-ROM) requires students to read and note information from an electronic

medium. Therefore, the same type of paper and pencil guided notes can easily be transformed into electronic format and students can use the copy and paste tools in various software programs to assist them while collecting information. The use of guided notes is a simple strategy for teachers to utilize and is especially helpful for students with learning disabilities.

Introduce Concept Maps

Concept maps are visual and graphic representations, usually in the form of a chart or diagram, used to help students connect, store, and retrieve main points in a structured and organized manner. The use of concept maps is an especially effective instructional strategy for students with learning disabilities (Ruzic & O'Connell, 2001). The use of concept maps increases student-engagement and encourages students to integrate their own knowledge with the new content. As with any new skill or strategy, the teacher should directly demonstrate using a concept map, and the students should have an opportunity to practice using it with teacher guidance before attempting to use it to learn new information independently. Advances in readily available and easy to use software (e.g., Excel, Word, PowerPoint) makes the utilization of concepts maps much easier. Refer Figure 2 for a concept map of the main components of this article.

Demonstrate Self Monitoring/Adjusting Skills

To improve the probability of academic success during school and in post-school activities, students must develop the essential skills, knowledge, and confidence to function as independent learners. It is important for

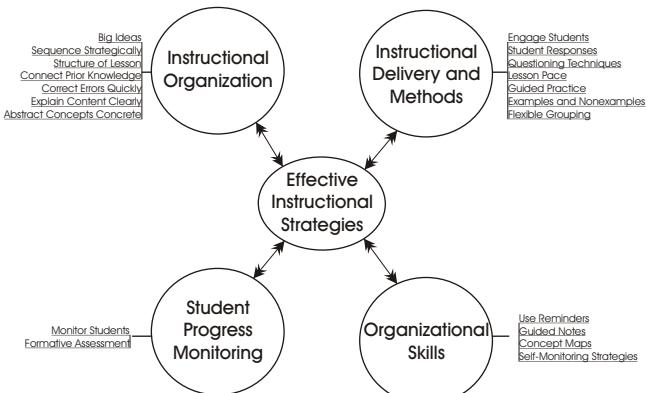


Figure 2. Concept map for the main components of effective instructional strategies

students to become aware of their thinking and learn to control and monitor their thoughts (i.e., self-regulation). Modeling a self-evaluation strategy directly and guiding students through several structured practice activities are essential components for learning to occur. During practice activities, students perform each step in the self-evaluation strategy. Once the self-evaluation strategy is learned, a checklist or other guide helps students to monitor their independent application of the self-evaluation strategy. For example, when writing an introductory paragraph on the overhead, think aloud: "Now, what should I write about? I think I will begin by describing how much I like to read. I have to remember to ask myself if I put a capital letter at the beginning? Did I put punctuation at the end? What should I write next?" Once modeled, meet with each student and instruct them to think aloud while writing, monitor for the required questions, and provide individual feedback. When students demonstrate mastery of the self-evaluation strategy, they may still need a checklist to prompt the specific questions when reviewing their writing. Promote generalization to other contexts by requiring students to apply the self-evaluation strategy in other learning situations.

Implications

In this article the authors described four categories of effective instructional strategies that can be used by teachers with diverse students and across content areas. Essentially, instructional strategies are the one variable in the classroom that is controlled entirely by the teacher. When students struggle in their learning process, teachers must apply instructional strategies that can better facilitate and enhance student learning. Given the rather extant literature base on the above described strategies, educators can begin to examine their classroom instruction and identify areas for implementing the strategies discussed in this article. The instructional strategies (what and how to teach) used by teachers have a major impact on student learning; when teachers use evidenced-based strategies, that impact is likely to be positive.

Conclusion

When teachers base instruction on the effective strategies described in this article, achieving positive educational outcomes for all students is possible. These strategies and techniques are especially important for struggling learners and students with learning disabilities, but all students will benefit from instruction incorporating these techniques. The four categories should not be viewed or practiced as separate strategies, but rather as an integrated approach to ensure that every student is successful after all, that's the job of a teacher.

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